

Project Pegasus Progress Update

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Overall we have completed Sections 15 and 16, Sections 17 and 31A are in progress (for the left wing only).

While assessing the work previously completed by earlier classes our group decided to team up with Kelsea, Liz, and Lydia. Together we are working on the left wing. We started by deburring and fluting all required wing ribs. We then cleco-ed the first two wing ribs to the attach angles which were already connected to the spar assembly to ensure that all holes matched up. We then used pop rivets to rivet all of the wing ribs to the attach angles. We attached wing ribs to both the right and left side of the spar assembly. We also attached all needed snap bushings. These were called for to protect any future wire strung through the wing ribs. Once all wing ribs were connected we attached the stub spar which marked the end of Section 15.

Next we split into two groups. Kelsea, Liz, and Lydia started deburring and labeling the wing skin while we worked on the stall warning. This has been one of the more challenging aspects of building the plane not because of the actual building but because of the labelled parts in the plans. We knew where all parts were and we knew that we had all necessary parts however we ran into issues on finding the correct washers to use. As the plans did not tell us which thickness to use we built the stall warning multiple times and had to use trial and error to ensure that everything was in place. We collaborated with our mentor David to ensure that we had built it correctly as the stall warning is an important part of the plane which tells you when stall speed is approaching. Finally after around 10 trials we put all parts in the correct place and were able to attach it to the wing rib. This marked the end of section Section 16.

After attaching the stall warning we cleco-ed on the wing skin that covers the wing ribs with the attached stall warning. By doing this we were able to ensure that we had attached the stall warning correctly and that it has enough room to function correctly. We then removed the wing skin so that we could continue working. The next sections focus on electrical wiring which we continued to work on while Kelsea, Liz, and Lydia continue to finish deburring all wing skins. We cut the called for wire and attached it to the stall warning by crimping the end. We then attached the second wire to the stall warning and ran it through the snap bushings towards the inboard side of the wing. We also ran two orange strings through all snap bushings in the wing. If needed later on (when the wing skins are on) we would be able to attach wires to these strings and run them through the wing without any problems. We have also attached the floating connector to the most inboard wing rib. This is where all electrical wires will attach to the fuselage. Connecting the floating connector took us a few days as one of the screws we needed was missing. It's uncertain whether it fell and was lost or if it was never included in the bag of screws but either way we had to wait a few days to get another one. We could not simply use another screw as we were missing a special screw that could not be replaced by another one. After getting a new screw we realized that we are not able to attach the floating connector yet as we looked ahead in the plans and realize that it is much easier to insert all wires without

having it attached to the wing rib. This is where we have run into the biggest challenge we have faced so far. The problem we are currently having is that we are building the red light that all left wings of planes are required to have, but the instructions are not entirely clear. We called Vans Aircraft and discovered that the piece that we couldn't find out where it went was not necessary anymore because it is used as a template to match drill holes but the holes are already put in on current pieces.

After finishing Section 31A we are hoping to finally attach the floating connector which would complete Section 16. Another reason that we can not attach the floating connector yet is because we are using loctite when screwing in the screws. This is a liquid that acts as a cement like substance and ensures that the screw cannot wiggle loose. This also means however that once screwed in we can not unscrew the screws so we need to be 100% sure that we are ready to attach it before we finally attach it. Once attached, we cleco-ed and then riveted the inboard most wing skin on.

At the same time as building the plane we have worked on the website for this project. We came up with a few new ideas which will give the website a newer and more organized look. We decided to create different tabs based on the different years that students have worked on the plane. We also split up the progress pictures and sorted them to each class to show the progress that specifically each class has done. We are also considering adding pictures of each student that is currently working on the plane as well as a few responses to the question "Why do you enjoy being part of Project Pegasus?" We decided to keep the Major Milestone page as well as the Sponsor page and will continue to post updates of our work. We decided to get rid of the Weekly Progress page as we do not believe that we can realistically keep that page up and decided that monthly updates along with major milestone updates would be enough. One page we decided to add was a page describing what an RV-12 is because most people do not know what an RV-12 is and why we are building one.

Pictures of our progress:

